Volunteer Lake Assessment Program Individual Lake Reports

WILSON POND, SWANZEY, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,022	**Max. Depth (m):**	4.6	**Flushing Rate (yr^{-1}):**	3.5
Surface Area (Ac.):	80	**Mean Depth (m):**	1.7	**P Retention Coef:**	0.63
Shore Length (m):	2,100	**Volume (m^3):**	539,500	**Elevation (ft):**	476

TROPHIC CLASSIFICATION

Year	Trophic class

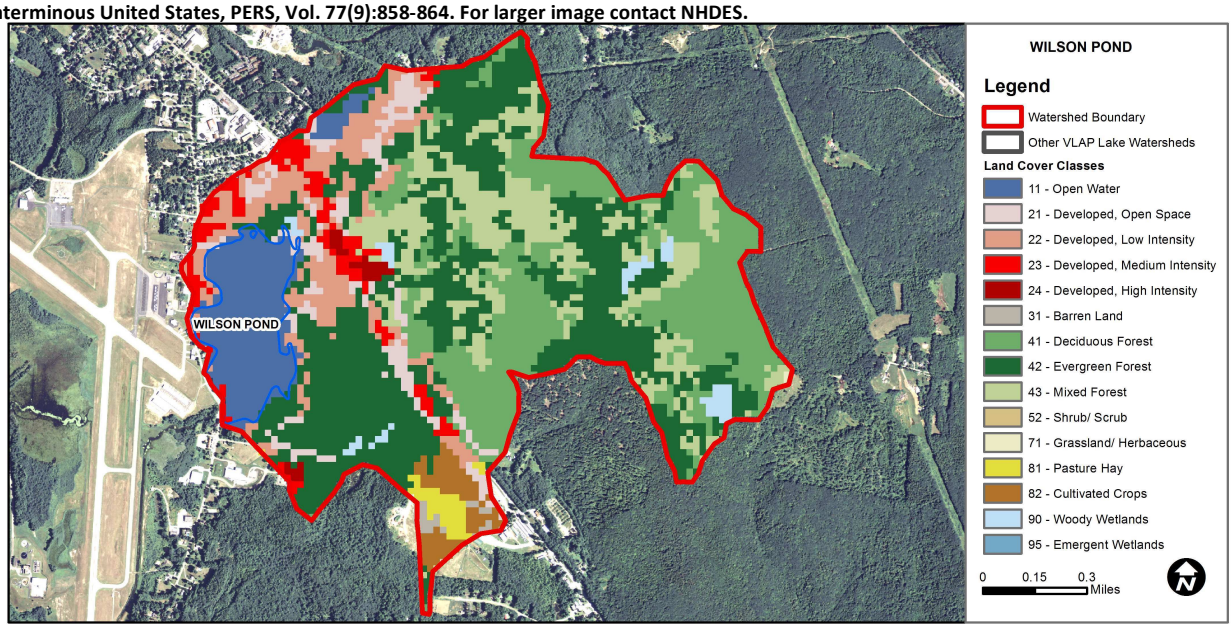
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Cautionary	<5 samples and median is > threshold. More data needed.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Encouraging	>2 samples exist that are > 75% of geometric mean criteria, but not enough samples to calculate geomertic mean. No single sample exceedances. More data needed.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	8.78	Barren Land	0.51	Grassland/Herbaceous	0.05
Developed-Open Space	4.69	Deciduous Forest	21.1	Pasture Hay	1.09
Developed-Low Intensity	8.2	Evergreen Forest	33.88	Cultivated Crops	2.14
Developed-Medium Intensity	3.58	Mixed Forest	13.8	Woody Wetlands	1.46
Developed-High Intensity	0.7	Shrub-Scrub	0	Emergent Wetlands	0

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
WILSON POND, SWANZEY, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels were low, less than the NH lake median, and decreased from those levels measured from 2009 to 2011.
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride were slightly greater than the NH lake medians and likely due to road salting on nearby major roadways.
- **E. COLI:** Outlet E. coli was very low and well below state standards for public beaches and surface waters.
- **TOTAL PHOSPHORUS:** Epilimnetic (upper water layer) was relatively low, less than the NH lake median, and decreased from that measured in 2010 and 2011. Inlet phosphorus was slightly elevated. A significant storm event occurred prior to sampling and stormwater runoff may have contributed to elevated levels.
- **TRANSPARENCY:** Transparency improved from that measured from 2009-2011, and the Secchi disk was visible on the pond bottom.
- **TURBIDITY:** Deep spot and Outlet turbidities were low. Inlet turbidity was elevated after significant storm event and stormwater runoff may have contributed to the elevated turbidity.
- **PH:** pH has historically fluctuated below desirable levels.
- **RECOMMENDED ACTIONS:** The improved water quality in 2012 may have been attributed to dry weather conditions throughout the summer and the lack of stormwater runoff. This indicates stormwater runoff likely contributes to pollutant loading in the pond. Educate watershed residents on implementing do-it-yourself stormwater management projects on their properties utilizing DES' "NH Homeowner's Guide to Stormwater Management".

Table 1. 2012 Average Water Quality Data for WILSON POND

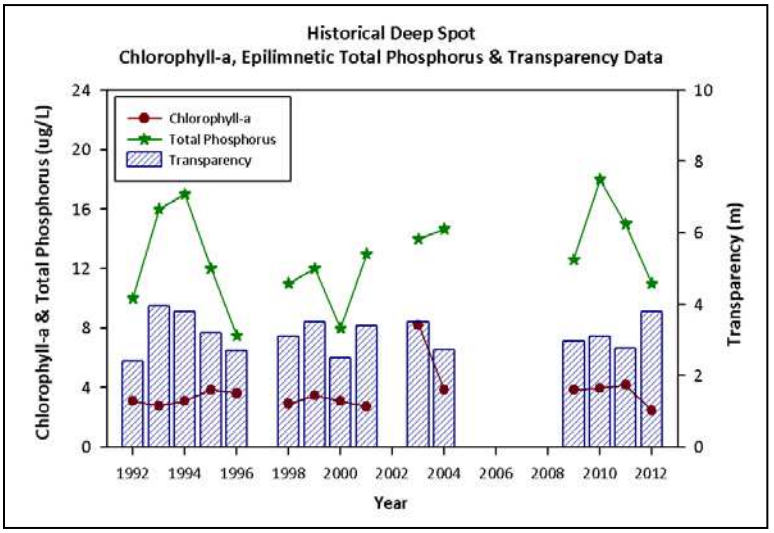
Station Name	Alk.	Chlor-a	Chloride	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	#/100ml	ug/l	m		ntu	
							NVS	VS		
Deep Epilimnion	4.9	2.45	13	89.0		11	3.79	3.80	0.72	6.86
Deep Hypolimnion				90.0		14			0.89	6.73
Inlet			14	96.0		21			2.31	6.60
Outlet			13	90.0	10	12			1.14	6.75

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	N/A	Ten years of consecutive data necessary to establish trend.
Transparency	N/A	Ten years of consecutive data necessary to establish trend.
Phosphorus (epilimnion)	N/A	Ten years of consecutive data necessary to establish trend.



This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:
Sara Steiner
PO Box 95
Concord, NH 03302-0095
(603) 271-2658
sara.steiner@des.nh.gov